

Directions: To continue learning how to mark text as a reading strategy and examine major physical differences in the male and female brain, read this research paper. 1) **HIGHLIGHT** sections that describe the physical differences between men and women's brains. 2) Write the attitudinal and behavior differences between men and women in the margins where indicated.

Brain Differences in Males and Females

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www.tarleton.edu/~sanderson/Brain%20Differences.doc

Physical Differences

These physical differences tend to show up at about age 7 (Krupa, 2001). The differences can be seen when comparing the **general size of the brain**, the **number of “gray” and “white” cells** contained in the brain, relative **hemisphere size**, **hypothalamus size**, as well as the **size of the corpus callosum**. Contrasts in morphology translate into behavioral and attitudinal differences in the two genders. These differences can profoundly impact not only how males and females learn in the average public school classroom, but also how physicians treat brain injuries or comfort the aged.

Not only is the average male body larger than the average female, but their **brain size** also tends to be larger (Ariniello, 1998). This is interesting considering that even though smaller, women's brains have

more **gray and white matter** (Bland, 1998). Gray cells are responsible for processing information, while white cells are neuron tissue used for communicating between cells (Bland, 1998). Female superiority in number of cells and connective tissue indicates that perhaps women process information differently than men and use their brains in gender-specific ways.

In women, the **left hemisphere** is nearly equal in size to the right hemisphere but in men, the left hemisphere is slightly larger than the right (Ariniello, 1998).

The **hypothalamus**, a small area in the center of the brain responsible for aggression, thirst, hunger, and sexual appetite tends to be larger in men than in women (Chadwick, 2001). Comparatively, females have a larger **corpus callosum** (Chadwick, 2001). This portion of the brain acts as the communication highway between right and left hemispheres (Heim, 2001). As we will see later, these two physical differences translate into profound behavioral and processing differences.

Attitudinal and Behavioral Differences

SPATIAL	Because of the physical differences in brain morphology, men
ABILITY	and women use their brains in different ways. Spatial ability is located
Men	in the left hemisphere (Peek, 2001). Because this area tends to be larger
	in men than women, men had an advantage in hitting targets, mentally

manipulating maps, compute mathematical problems, and breaking items into their basic components (Sutter Health System, 2001). By comparison, women scored lower in hitting targets and computing math problems (Chadwick, 2001). Researchers noted that when asked to manipulate maps, women changed the physical orientation of the map itself; men, however, could make the perspective change in their heads.

Women A **hypothalamus** which gets up to four times larger in males than females (Young, 2000) points to a more aggressive attitude, a competitive behavior, and a comparatively large sexual appetite. Men reacted more to sexual photographs than women (women responded better to titillating passages in books (Chadwick, 2001, Heim, 2001). The larger hypothalamus tends to make men more domineering, power-hungry, and goal oriented. Women, by comparison, tended to be more socially conscious and worked cooperatively to arrive at a consensus (Chadwick, 2001). When men were faced with a problem, researchers noted that men came to a decision, acted, and moved on, whereas women preferred to discuss the problem, consider different perspectives, and come to an agreement on how best to solve the problem .

HYPO
THALAMUS
Men

A larger **corpus callosum** in females translated to better, and faster, communication between the right and left hemispheres of the brain (Kimura, 1985). MRIs and brain scans show that, unlike men, women tend to process information in a variety of different places in their brain (Sutter Health System, 2001). Some of these sites are located

CORPUS
CALLOSUM
Women

Women in the left hemisphere, while others are located in the right. As a result,
(continued) women tend to possess superior verbal ability; baby girls talk earlier and more fluently than baby boys (Discover NeuroQuest, 2001). Little girls enter kindergarten with a larger vocabulary than boys, and learn foreign languages more easily than their male counterparts (Kimura, 1985).

Just as the jokes indicate, women actually tend to have a better (longer) memory than men. They can remember past events, faces, names, and memorized passages more easily than men do. Women tend to process problems intuitively and creatively, while men tend to be more technical and direct (Heim, 2001). Women surpass men in fine motor control and tend to be right handed more often than men (Chadwick, 2001).

Men

ACCORDING TO THIS COLLEGE PAPER, MEN AND WOMEN'S BRAINS DIFFER DRASTICALLY IN THEIR BIOLOGICAL MAKE-UP. THE THREE MAIN PHYSICAL AND BEHAVIORAL DIFFERENCES ARE:

1) _____

2) _____

3) _____
